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H. E. KIMBLE, M.D.

CHICAGO



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ELECTROCOAGULATION IN CERVICITIS *

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Cervicitis is a diffuse, progressive, degenerative or proliferative lesion involving all the tissues of the cervix. In a broad sense it means an inflammatory reaction to injury. Various terms such as endocervicitis, erosion, ectropion, etc., have been used to designate lesions in the cervix. Such terms are misleading as Bailey⁽¹⁾ has pointed out. He states: "The term 'Erosion' is an entirely erroneous one in this connection from the pathological standpoint. This term was previously applied as a facial description of the gross appearance of certain aspects of the condition only, purely as a clinical term contrary to the laws of medical terminology today founded as it is on a pathological basis, and therefore the term cervicitis is the only applicable one." Ground,⁽²⁾ Maryan⁽³⁾ and Ludden⁽⁴⁾ also prefer the term cervicitis to describe this condition.

Let us consider briefly the conditions under which cervicitis develops. The cervix is an organ in the body exposed to a great variety of thermal, chemical, bacterial and mechanical irritations. Some protection against bacteria is offered by the vagina. The normal flora of the vaginal passage and the acidity of its secretions provide a degree of protection against invading organisms. Of all causes infection is the most common in the production of cervicitis, but this factor must not be over-emphasized. Trauma, ever so slight, creates a port of entry for infection, the tissues of the cervix not being infected otherwise, regardless of the possible presence of pathogenic bacteria.

The anatomical structure of the cervix renders it susceptible to infection. Baith⁽⁵⁾ quoting Strumdorf, estimated 60,000 to 80,000 racemose glands in the cervical canal. Numerous round or oval shaped depressions also appear in the mucosa. Both make ideal living quarters for invading bacteria, from which they are not readily evicted. The subjective symptoms do not run parallel with the pathological findings in cervicitis. It is unreasonable to expect a pronounced

pathological condition in many early cases of cervicitis. So much emphasis has been placed on leucorrhea and erosion that one is led to believe that they are the cardinal symptoms of cervicitis. On the contrary they may not even be present. Abnormality in size, shape, color and consistency of the cervix are more important symptomatically than leucorrhea. An infected cervix is frequently overlooked, and its presence should always be suspected until definitely eliminated by careful examination.

Loczeaux⁽⁶⁾ gives three reasons why physicians all too frequently fail to detect the presence of cervical infection:

1. It is readily assumed by the physician that unless there is a definite history of Neisserian infection, abortion or labor, the cervix is automatically ruled out.

2. There is a great difference of opinion among female patients as to what constitutes abnormality in the amount and character of leucorrheal discharge.

3. The tendency is to accept the patient's story in excluding the cervix as a focus of infection and carefully to examine tonsils, sinus, gall bladder and intestinal tract, whereas the cervix is frequently both the source of infection unknown to the patient and the cause of prevarication if there is an infection known to the patient.

The importance of focal infection in the cervix has only recently received the emphasis it deserves. The complications associated with infection in the cervix are manifold. The cervix, which Tovey⁽⁷⁾ calls "the tonsils of the pelvis," is according to him, "a frequent source of focal infection, pelvic infection, metritis, salpingitis, pelvic peritonitis, urethritis, perimetritis and stricture of the pelvic ureters followed by pyelitis and pyelonephritis." Other complications are sterility, pre- and post-partum infections and arthritis.

Far more important than any of these is the potential danger of malignancy occurring in a chronically inflamed cervix. It is a grave error to regard cervicitis as unimportant in

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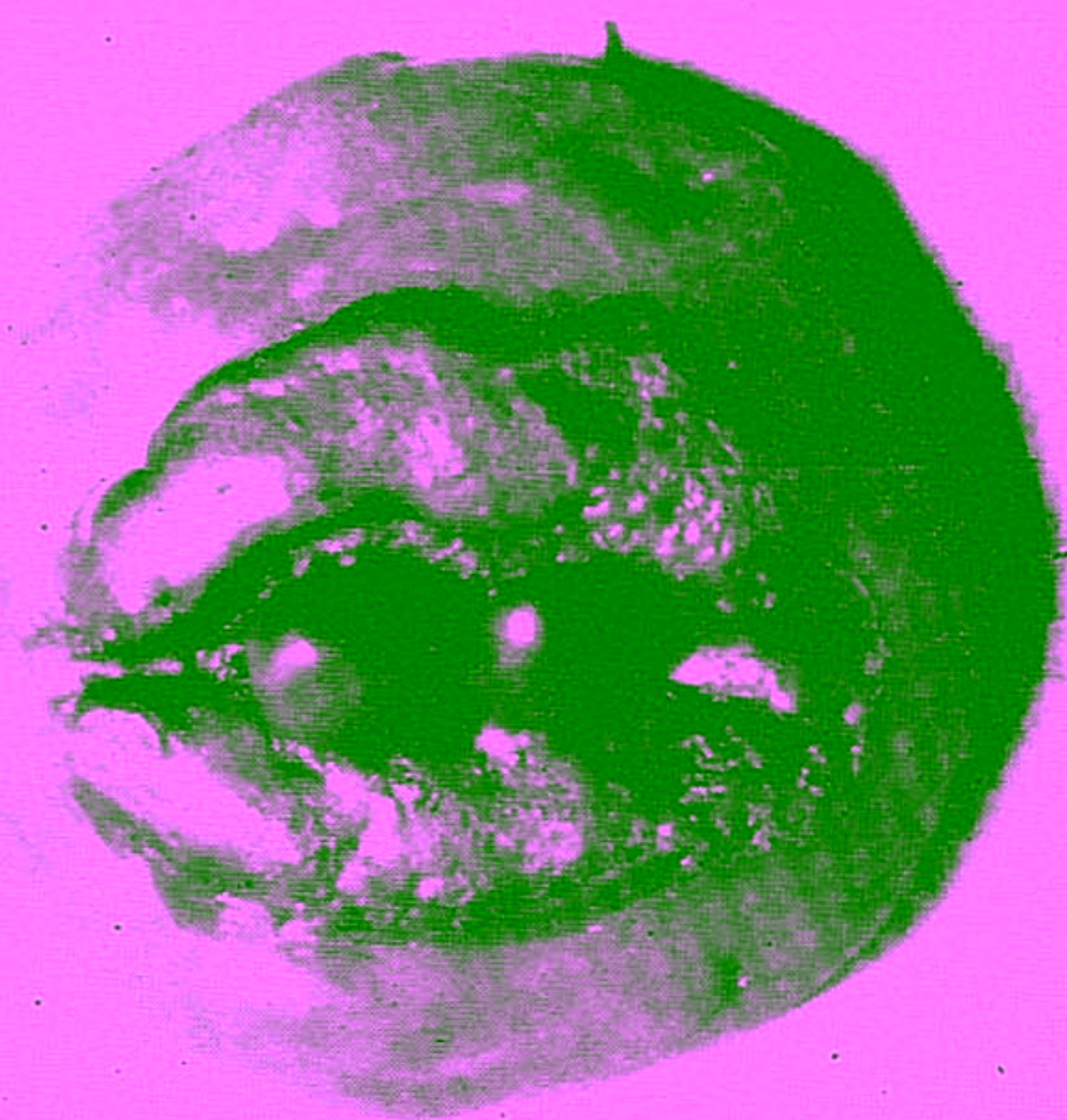


Fig. 1. Cervicitis with erosion and cervical polypi. (Before treatment.)

the face of its recognition as a common precursor to malignancy.

Chronic cervicitis can be cured or greatly improved. It is unscientific to remove the uterine adnexa for complications arising from a diseased cervix without first adequately caring for that source. In fact most complications clear up following proper treatment of the cervical condition, rendering unnecessary more serious surgery.

Brown,⁽⁸⁾ Soter,⁽⁹⁾ Rowett,⁽¹⁰⁾ Henson⁽¹¹⁾ and Matters⁽¹²⁾ lay great stress on the importance of eradicating the underlying etiologic factor.

Cervicitis is sometimes contracted during examination of the patient by the physician and a minimum of instrumentation will greatly reduce trauma and infection. Cervicitis resulting from trauma sustained during delivery can be largely prevented by treating lacerations as soon as possible thereafter.

Some cases heal spontaneously. As the inflammation subsides, squamous epithelium grows in from the portio, displacing the columnar epithelium. At the same time it enters the glands and succeeds in filling them with solid squamous "buds." These buds gradually flatten out into the general surface covering. Treatment aims at bringing about this process of healing. Only a few of the many different methods in vogue today are able to accomplish it. The successful procedure must destroy wholly or in part any tissue which harbors infection. This will include diseased tissue about or in the laceration as well as the entire glandular area of the cervical canal. Once this is accomplished healing takes place rapidly. The modern tendency in the treat-



Fig. 2. Cervix — 1 day after treatment by electrocoagulation.

ment of cervicitis is to find an alternative for orthodox surgery, which is no longer the method of choice.

This brings us to the methods in use today. Excellent results have been claimed by Tovey,⁽⁷⁾ and others, with copper ionization. This method requires too many treatments and can be used only in selected cases. The radio knife and Coning operation are innovations which destroy too much normal tissue in the eradication of cervical pathology. With improved electrodes, however, this objection can be overcome. Until recently cauterization has been used very extensively. Only a light cautery can be used in the office. Chaffin⁽¹³⁾ states: "Post and other small cauteries fail finally because they cool too quickly and do not carry enough heat to the high and deep tissue to destroy the deep glands." Relapse or reinfection occurs if all glands are not destroyed. The use of a heavy cautery requires hospitalization for what should actually be an office procedure.

Powell,⁽¹⁴⁾ Henson,⁽¹¹⁾ Fulkerson⁽¹⁵⁾ and Crossen⁽¹⁶⁾ all stress the dangers of atresia and stenosis following cauterization, which involves production of scar tissue. Late sloughing and alarming hemorrhage are not uncommon. We often find the cervix as large after as before cauterization. The cervix does not return to its normal size because many of the involved glands cannot drain, and remain infected and enlarged. Though leucorrhea is decreased through the destruction of part of the glands and the creation of scar tissue, the cervicitis is not cured. Until we stop trying to cure leucorrhea and erosions and appreciate that the entire pathology must be cleared up, we never will achieve satisfactory results.

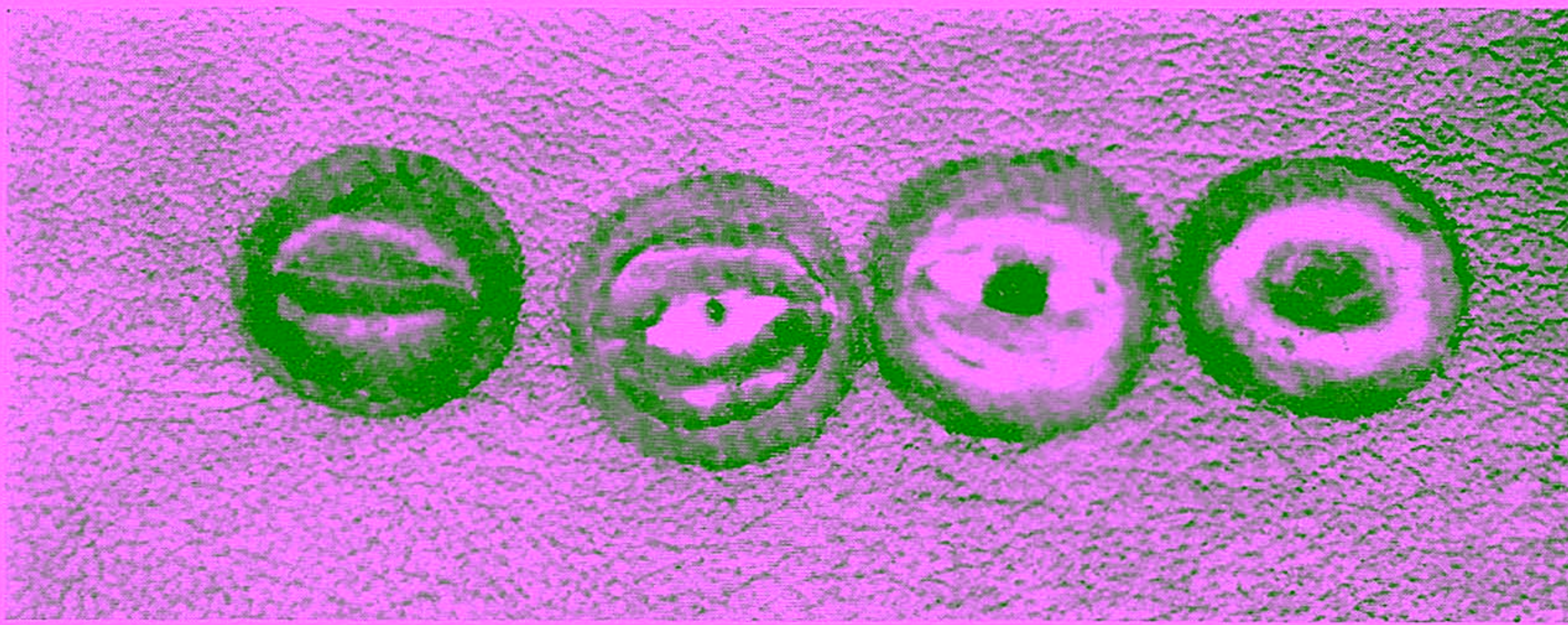


Fig. 3. Left to Right: (a) Large boggy inflamed cervix; (b) coagulation of canal only; (c) coagulation of erosion 3 weeks later; (d) healed cervix 8 weeks later.

What is the effect of cauterization? The answer to this question has been ignored, because no scientific explanation can be given. Areas much deeper and wider than the usual linear markings are destroyed, not only from the high temperature, but through the absorption of toxins, which destroy the circulation in the tissues adjacent to the burned areas. The glands have been destroyed in this area and so have deeper capillaries. The result is a portion of the cervical wall becomes gangrenous and sloughs. Where ever there is a defective blood supply scar tissue will develop. The consequent stenosis or contraction of scar tissue, if extensive, will produce atresia of the canal. In cauterization it is the aim of the operator to leave enough diseased tissue between the linear markings in the hope that enough stretching of this tissue will occur to offset the contracting scar tissue. As long as any tissue is left between the treated area cervicitis still remains.

Obviously, cauterization as a treatment for cervicitis either fails to cure or, if it does cure, produces atresia of the cervical canal. Its use during the child bearing age is unwarranted and without scientific basis. Those who will still persist in using the obsolete cautery should remember the unjustified pain, discomfort, and even danger, they inflict on those who later may become mothers.

In contrast to cauterization there is at our disposal electrocoagulation. It is questionable whether coagulation has anything in common with cauterization. In coagulation the heat is produced in the tissues. Drainage of the mucosa and cystic glands takes place at once. In two or three weeks the coagulum liquefies or dissolves. No slough of any kind is present. It is only necessary to coagulate deep enough so that all glands obtain free drainage and to destroy all devitalized tissue in the

lacerations. The proper depth of coagulation ranges from three to five millimeters. Healing is completed by the ingrowth of squamous cells similar to that previously mentioned in connection with spontaneous healing.

The most important result is the soft flexible nature of the new lining of the cervical canal. In some respects it resembles the tonsil bed after removal of the tonsils by coagulation. This soft flexible lining cannot, however, be obtained with electrodes that must be rotated in their operation. The active portion of an electrode which is rotated obviously does not make constant and uniform contact with the tissue to be coagulated. As contact is made and broken during the rotation of such electrodes, arcing occurs, charring the tissues, similar to cauterization.

The electrode which I have been using with great success in chronic cervicitis was described in a previous paper.⁽¹⁷⁾ No rotation is necessary. A slight oscillatory motion as the electrode is moved around the cervix produces uniform coagulation of the surface to the desired depth. It can be used equally satisfactorily in cervical canals of every size, shape or contour.

Only one treatment is needed in 80 per cent of the cases. Complete recovery is attained from 6 to 8 weeks after the treatment. There is no danger of atresia, hemorrhage, scar tissue formation or other sequelae which often follow other methods. Very little change has been made from my original method of treatment. When the cervix is large and boggy I coagulate only the canal at the first treatment. If there is a pin hole os, I coagulate only the os at the first treatment. This is to establish drainage. Once drainage is established the cervix becomes smaller and more normal in appearance. About three weeks later the canal is coagulated. The erosion which is



Fig. 5. Flexible handle on Kimble electrode makes it possible to treat any type of case; no insulation required.

markedly decreased in size by that time, is also treated.

Clinically I have obtained good results even in the severest cases. Rapid subsidence of complicating pelvic pathology has been noted.

Of 200 cases, 168 were cured and 32 improved. The latter were cured symptomatically, long standing fibrosis of the cervix preventing return to normal size.

Conclusions

In conclusion I wish to emphasize --

1. Cervicitis is far more common than realized.

2. A soft, large, boggy cervix is just as diseased as one presenting leucorrhea and erosion and should be treated.

3. The cervix often contains foci of infection from which numerous complications arise.

4. Too much emphasis has been placed on the relief of symptoms, such as leucorrhea, when the entire organ should be considered and treated.

5. If properly performed little or no scar tissue results from electrocoagulation in the treatment of cervicitis.

6. Cautery has no place in the treatment of cervicitis during the child bearing age.

7. The electrocoagulation method of the treatment of cervicitis is a prophylactic treatment of cancer of the cervix.

7854 S. Ashland Ave.

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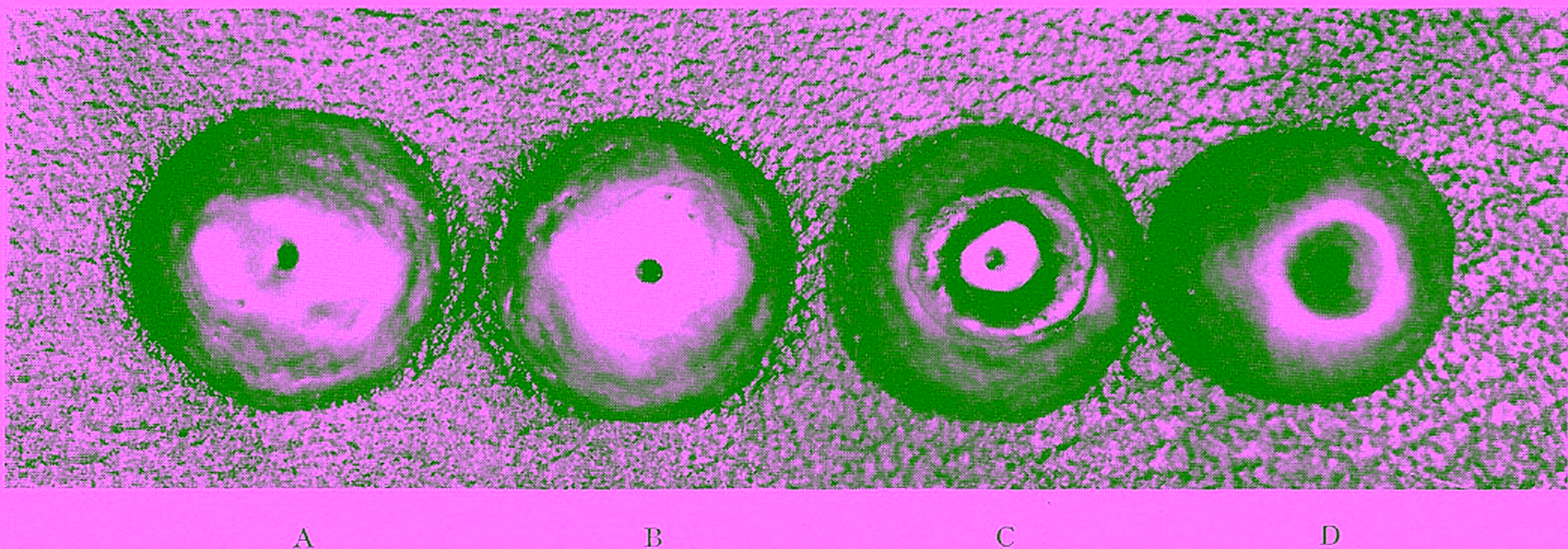


Fig. 4. (a) Cervicitis with pin-hole os; (b) coagulation of os only; (c) coagulation of canal 3 weeks later; (d) healed cervix 8 weeks later.

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Discussion

Dr. Joseph F. Jaros (Chicago): Dr. Kimble's paper is admirably conservative. In my own more limited experience with electrocoagulation for cervicitis, I can confirm the value of his method.

In the very opening paragraph, Dr. Kimble refers to Bailey and his monumental work in which he serially sectioned and studied over 800 specimens of cervicitis. Bailey⁽¹⁾ concluded from his studies that cervicitis is always associated with an infection, even in the virginal cervix; that the newly formed cells in the repair of the so-called erosion, whether squamous or cylindrical, became the site of cervical cancer. Crossen,⁽²⁾ at Washington University, reviewing 121 cases of cancer after a five year interval, pointed out the difficulty at the present time in discovering cancer of the cervix in its early stages. Only three of these 121 cases were discovered in the early stage. As a result, the percentage of cure at the end of five years was only 22 per cent. Crossen concludes that, "We must go back of the whole cancer picture and remove the condition which precedes cancer." According to Bailey's work, this means the early eradication of cervicitis. Pemberton and Smith⁽³⁾ attempted this with cauterization. They reported on 5962 cases in which amputation, repair and cauterization was done on the cervix over a period of 52 years. Only five cases of cancer occurred and these only where surgical repair was done. Not a single case occurred after cauterization. On the other hand, in over 1100 cases of cancer of the cervix reported by Pemberton and Smith, and by Levin⁽⁴⁾ not a single case had ever had cauterization done.

Let us review, then, what Dr. Kimble offers in his paper. In cervicitis—a condition which heretofore has baffled medical treatment, and has demanded radical surgical procedures for its cure—Dr. Kimble offers a simple method of electrocoagulation, which eliminates all the objections now found in cauterization, requiring no anesthetic, causing only negligible discomfort, resulting in no scarring, stenosis or subsequent hemorrhage, and leaving a regenerated sound epithelium. If, as recent work seems to prove, cervicitis is the precursor of cancer; if, in the observation of men of various clinics, the discovery of early cervical cancer is rarely possible; and if, even after years have elapsed, no case of cancer has been found to occur following the proper early elimination of cervicitis; then, as a high light emanating from the proceedings of this Congress, let us by careful observation of patients in the next five years, endeavor to show not only that electrocoagulation is a simple ef-

ficient treatment for cervicitis, not only as Dr. Kimble conservatively states in the last line of his summary that it is a prophylactic treatment for cancer, but that it is today the prophylactic treatment of cancer of the uterine cervix. The incidence of cancer of the cervix is 16 per cent of all cancers in women. What an incentive to conscientious effort it would be in the coming years if we had a similar simple office procedure which would promise the elimination of the present necessary radical measures in the present equal incidence of cancer of the breast.

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Dr. H. E. Kimble (closing): I haven't much more to say, but perhaps you would like to hear about some of the bad results that have occurred in this treatment, if you want to call them bad results. In two cases of this series that I have reported, I had hemorrhages. One patient had a blood pressure of 220, which I figured accounted for her having a hemorrhage. The other patient had a mild hemorrhage after treatment, but with rest in bed a few days it subsided without packing or any other treatment.

Another case, which was a Neisserian infection, developed an acute flareup about four weeks after the treatment. It is questionable whether that flareup came from the treatment, or whether it was the result of a fresh supply of Neisserian germs, which I think in this case was the cause of the flareup. She had a typical acute salpingitis. About three weeks after electrocoagulation the coagulum dissolved, and at that stage it almost looked as though there had never been a treatment given. I think it was at this time that the new infection was superimposed on the old.

As far as scarring, or atresia, or stenosis is concerned, I have not been able to find any of those things occurring. I have been following some of these cases through for a year or two.

About six or eight weeks after the original treatment the patient may say, "Doctor, I have not menstruated since the treatment. Do you think this is because of the treatment?" A few months later you will find that the patient is pregnant, which shows that cervicitis has something to do with sterility in a number of these cases.

